

REMARKS

Claims 1-14 are pending. Claims 1-14 are rejected. Claims 1-3, 5-8 and 11-14 are amended.

This Response is filed in reply to the Final Office Action dated May 6, 2004. Applicant's silence with regard to any of the Examiner's rejections should not be construed as acquiescence to any of the rejections. The amendments to the claims are being made solely to expedite the prosecution of the above-identified application. The amendments to claim 2 restate the claim in independent form, formally incorporating the limitations of claim 1 into claim 2, which were previously incorporated by reference due to dependency. Applicant reserves the option to further prosecute the same or similar claims in the instant or subsequent patent applications. Upon entry of the Amendment, claims 1-14 are pending in the present application.

Claims 1, 5-8 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Perlman (U.S. Patent No. 5,420,862).

Claims 2-4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being obvious over Perlman.

Applicant traverses the Examiner's rejections and respectfully requests reconsideration in view of the remarks and amendments herein.

With respect to the rejection of claim 1 under 35 U.S.C. 102(b), claim 1 as amended recites, among other things, *selection logic operative during operation of the network device to (i) enable the bridging logic and disable the routing logic under a first set of operating conditions, wherein a transition from router operation to bridge operation includes merging multiple network-layer segments into a bridged network-layer segment, and (ii) enable the routing logic and disable the bridging logic under*

a second set of operating conditions, wherein a transition from bridge operation to router operation includes dividing a bridged network-layer segment into multiple segments having distinct routing identities. Support for amended claim 1 is found in the specification, including at page 15 and in the abstract. As recited in claim 1, Applicant's network device can be seen to transition between bridge operation and router operation based on the topology of the network. For example, and as described at page 18 of the specification, a link can be divided if it becomes very large, i.e., the number of nodes exceeds a predetermined threshold, or its traffic approaches the traffic-bearing capacity of the link.

Perlman, on the other hand, describes an apparatus that determines if a destination address is a router address or a broadcast address used by a router (col. 7, lines 33-41). If it is either type of address, the apparatus operates as a router (col. 7, lines 41-45). If not, the apparatus operates as a bridge (col. 7, lines 46-48). Unlike standard Transmission Control Protocol/Internet Protocol (TCP-IP) handling, wherein a router ignores an Address Resolution Protocol (ARP) message, router operation in Perlman determines if the packet is a local ARP request, a local ARP response, a remote ARP request, or a remote ARP response, and takes appropriate action depending on the type of packet.

However, Perlman does not teach or suggest merging multiple network-layer segments into a bridged network-layer segment or dividing a bridged network-layer segment into multiple segments having distinct routing identities, as described for Applicant's transitions between bridge operation and router operation and between router operation and bridge operation, respectively. The switch to/from bridge operation from/to router operation in the Perlman apparatus depends solely on the address being transmitted, and the switch does not affect, nor is it affected by, merging or dividing segments. Based on the above, Applicant respectfully suggests that independent claim 1 is in condition for allowance, and allowance is requested.

With respect to the rejection of claims 5-8 under 35 U.S.C. 102(b), claims 5-8 are amended to depend from claim 2. With respect to the rejection of claims 11-14 under 35 U.S.C. 102(b), claims 11-14 as amended recite, among other things, that *the first set of operating conditions includes the condition that less than a predetermined number of link numbers are available for use as part of a network-layer address prefix for one of the communications links*. As such, and in view of the below remarks with respect to claim 2, the rejections of claims 5-8 and 11-14 are moot.

With respect to the rejection of claim 2 under 35 U.S.C. 103(a), claim 2 as amended recites, among other things, a *first set of operating conditions* that includes *the condition that less than a predetermined number of link numbers are available for use as part of a network-layer address prefix for one of the communications links*. Under the first set of operating conditions, bridging logic is enabled and routing logic is disabled. Applicant agrees with the Examiner's assessment that Perlman does not teach that the first set of operating conditions includes the condition that less than a predetermined number of link numbers are available for use as part of a network-layer address prefix for one of the communication links. As provided in the remarks above, the condition that Perlman uses to switch to a bridge operation or a router operation is whether or not an address is either a router address or a broadcast address used by a router.

The Examiner further notes that Perlman discloses ARP messages and responses. Based on this, the Examiner contends that it would have been obvious to one of skill in the art to have included "the condition that less than a predetermined number of link numbers are available for use as part of a network-layer address prefix for one of the communications links so that the bridge can properly forward the ARP message as suggested by Perlman." Applicant respectfully disagrees.

As noted above, Perlman checks whether or not the address received at the apparatus is either a router address or a broadcast address used by a router. If it is,

the Perlman apparatus initiates router processing. If it is not, bridge processing is initiated. While Perlman does disclose the use of ARP messages and responses, these are used in router processing, as indicated in blocks 1020, 1030, 1040 and 1050 of Fig. 1A (col. 7, line 49 to col. 8, line 8). There is no teaching or suggestion in Perlman that the switch between bridge operation and router operation is dependent on the number of link numbers available. In fact, there is no teaching or suggestion in Perlman that link numbers are limited to a predetermined number.

Based on the above, it does not follow that the use of ARP messages and responses by Perlman would lead one of skill in the art to include the condition that less than a predetermined number of link numbers are available for use as part of a network-layer address prefix. Further, the proper forwarding of ARP messages and responses in Perlman depends solely on whether the address received at the apparatus is either a router address or an address used by a router. Thus, there is no motivation to include an additional condition dependent on exceeding a predetermined number of link numbers, especially in view of the fact that Perlman does not teach or suggest that link numbers are limited to a predetermined number.

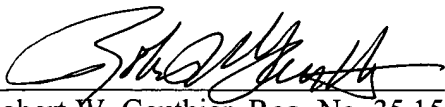
In view of the above remarks, Applicant respectfully suggests that independent claim 2 is in condition for allowance, and allowance is requested. Claims 3-10 depend directly or indirectly from claim 2, and are allowable, at least by dependency. As previously noted, independent claims 11-14 as amended each recite the limitation that *the first set of operating conditions includes the condition that less than a predetermined number of link numbers are available for use as part of a network-layer address prefix for one of the communications links*. For the reasons as discussed with respect to claim 2, claims 11-14 are allowable.

CONCLUSION

On the basis of the foregoing Amendment and Remarks, this application is in condition for allowance. Accordingly, Applicant requests allowance.

Respectfully submitted,

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